0590

#13

3 <110> APPLICANT: YU, LEI



## **ENTERED**

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/841,720D

DATE: 10/08/2002 TIME: 13:42:58

Input Set : A:\INDA002USD1.APP

Output Set: N:\CRF4\10082002\I841720D.raw

```
5 <120> TITLE OF INVENTION: MU OPIOID RECEPTOR: COMPOSITIONS AND METHODS
 7 <130> FILE REFERENCE: INDA:002USD1
9 <140> CURRENT APPLICATION NUMBER: 09/841,720D
10 <141> CURRENT FILING DATE: 2001-04-24
12 <150> PRIOR APPLICATION NUMBER: 08/120,601
13 <151> PRIOR FILING DATE: 1993-09-13
15 <160> NUMBER OF SEQ ID NOS: 9
17 <170> SOFTWARE: PatentIn Ver. 2.1
19 <210> SEO ID NO: 1
20 <211> LENGTH: 1618
21 <212> TYPE: DNA
22 <213> ORGANISM: RAT
24 <220> FEATURE:
25 <221> NAME/KEY: CDS
26 <222> LOCATION: (214)..(1407)
28 <400> SEQUENCE: 1
29 cgtggaaggg ggctacaagc agaggagaat atcagacgct cagacgttcc cttctgcctg 60
31 cogetettet etggtteeae tagggetggt ecatgtaaga atetgaegga geetagggea 120
33 gctgtgagag gaagaggctg gggcgcgtgg aacccgaaaa gtctgagtgc tctcagttac 180
35 agectaecta gteegeagea ggeetteage ace atg gae age age ace gge cea
36
                                        Met Asp Ser Ser Thr Gly Pro
37
39 ggg aac acc agc gac tgc tca gac ccc tta gct cag gca agt tgc tcc
                                                                      282
40 Gly Asn Thr Ser Asp Cys Ser Asp Pro Leu Ala Gln Ala Ser Cys Ser
            10
                                15
41
                                                                      330
43 cca gca cct ggc tcc tgg ctc aac ttg tcc cac gtt gat ggc aac cag
44 Pro Ala Pro Gly Ser Trp Leu Asn Leu Ser His Val Asp Gly Asn Gln
                            30
                                                                      378
47 tee gat eea tge ggt etg aac ege ace ggg ett gge ggg aac gac age
48 Ser Asp Pro Cys Gly Leu Asn Arg Thr Gly Leu Gly Gly Asn Asp Ser
                        45
                                                                      426
51 ctg tgc cct cag acc ggc agc cct tcc atg gtc aca gcc att acc atc
52 Leu Cys Pro Gln Thr Gly Ser Pro Ser Met Val Thr Ala Ile Thr Ile
                                        65
                                                                      474
55 atg gcc ctc tac tct atc gtg tgt gta gtg ggc ctc ttc gga aac ttc
56 Met Ala Leu Tyr Ser Ile Val Cys Val Val Gly Leu Phe Gly Asn Phe
59 ctg gtc atg tat gtg att gta aga tac acc aaa atg aag act gcc acc
                                                                      522
60 Leu Val Met Tyr Val Ile Val Arg Tyr Thr Lys Met Lys Thr Ala Thr
                                95
                                                    100
            90
                                                                      570
63 aac atc tac att ttc aac ctt gct ctg gca gac gcc tta gcg acc agt
64 Asn Ile Tyr Ile Phe Asn Leu Ala Leu Ala Asp Ala Leu Ala Thr Ser
```

DATE: 10/08/2002 RAW SEQUENCE LISTING PATENT APPLICATION: US/09/841,720D TIME: 13:42:58

Input Set : A:\INDA002USD1.APP
Output Set: N:\CRF4\10082002\1841720D.raw

							110					115					
65		105		ttt	a 2 a		110	220	tac	cta	atα		aca	t.aa	ccc	ttc	618
6/ 6	aca i	cly	Dec	Phe	cay cin	cor	y LC Val	aac λen	Tur	T.eu	Met	Glv	Thr	Tro	Pro	Phe	
		Leu	PIO	PHE		125	var.	ASII	- Y -	DCu	130			1		135	
69 3	120	200	a+a	ctc			atc	ata	atc			σat.	tac	tac	aac	atq	666
71 (	gga ·	acc mb~	TIA	Leu	Cve	Lve	Tle	Val	Tle	Ser	Tle	Asp	Tvr	Tyr	Asn	Met	
	зтХ	TIII	TIE		140	цуз	116	Val	110	145			-1-	-1-	150		
73	++ a	200	200	ata		acc	ctc	tac	acc		аσс	ata	gac	cqc	tac	att	714
75 1	Dho	mbr.	Cor	Ile	Dhe	Thr	Len	Cvs	Thr	Met	Ser	Val	Asp	Arq	Tyr	Ile	
77	PHE	T 11T	261	155	1 IIC	1111	Licu	CID	160				-	165	-		
70 (	act	ata	tac	cac	cca	atc	aaa	acc		gat	ttc	cqt	acc	ccc	cga	aat	762
90	η . 1 1 - 1	y cc val	Cve	His	Pro	Val	Lvs	Ala	Leu	Asp	Phe	Arq	Thr	Pro	Arg	Asn	
81	нта	vaı	170	1115	110	· u		175				,	180		_		
83 (	acc	aaa		gtc	aac	atc	tac		taa	atc	ctc	tct	tct	gcc	atc	ggt	810
8/1	gcc Δla	Lvs	Tle	Val	Asn	Val	Cvs	Asn	Trp	Ile	Leu	Ser	Ser	Ala	Ile	Gly	
85		185	110	, 42			190		-			195					
87	cta	cct	αt.a	atg	ttc	atq	qca	acc	aca	aaa	tac	agg	cag	ggg	tcc	ata	858
88	Leu	Pro	Val	Met	Phe	Met	Āla	Thr	Thr	Lys	Tyr	Arg	Gln	Gly	Ser	Ile	
89						205				,	210					215	
91	αat.	t.ac	acc	ctc	acq	ttc	tcc	cac	cca	acc	tgg	tac	tgg	gag	aac	ctg	906
92	Asp	Cvs	Thr	Leu	Thr	Phe	Ser	His	Pro	Thr	Trp	Tyr	Trp	Glu	Asn	Leu	
93					220					225					230		
95	ctc	aaa	atc	tgt	gtc	ttt	atc	ttc	gct	ttc	atc	atg	ccg	atc	ctc	atc	954
9.6	Leu	Lys	Ile	Cys	Val	Phe	Ile	Phe	Ala	Phe	Ile	Met	Pro	He	Leu	Ile	
97				235					240					245			
99	atc	act	gtg	tgt	tac	ggc	ctg	atg	atc	tta	cga	ctc.	aag	agc	gtt	cgc	1002
100	Tle	, mha	- 37-	٠ .	_	~ ~											
		; T111	va.	r cas	з Туі	: GIZ	Lei			e Lei	1 AI	g Lei	ı Lys	s Sei	r Va	l Arg	
101			250	0				255	5				1 Lys 260	0	r Va.	l Arg	1050
103	atg	r cta	250 a tc	a aac	tco	c aaa	ı gaa	255 a aag	j gad	agg	g aa	t ct	1 Lys 260 g cgo	0 c agg	r Va. gate	c acc	1050
103	atg	cta Leu	250 a tcg 1 Sei	a aac	tco	c aaa	ı gaa s Glı	255 a aag 1 Lys	j gad	agg	g aa	t cto	Lys 260 g cgo l Arg	0 c agg	r Va. gate	l Arg	1050
103 104 105	atg Met	cta Leu 265	250 a tcg i Sei	O g ggc r Gly	tco Sei	c aaa c Lys	gaa Glu 270	255 a aag 1 Lys	g gad s Asp	c ago	g aa g Asi	t cton n Leo 27!	Lys 260 g cgo L Arg	o c ago g Aro	r Va. g ato	c acc	
103 104 105 107	atg Met	cta Leu 265	250 a tog i Sei	O g ggo r Gly a cto	tco Sei	aaa Lys	gaa Glu 270	255 a aag 1 Lys ) g gct	g gad g Asp s Asp	c ago	g aar g Asi	t cton Lei	Lys 260 g cgo L Arg 5 c tgo	0 c agg g Arg c tgg	y ato	c acc e Thr	1050 1098
103 104 105 107 108	atg Met cgg Arg	cta Leu 265 ato Mei	250 a tog i Sei	O g ggo r Gly a cto	tco Sei	aaa Lys ggto l Val	gaa Gli 270 gto L Val	255 a aag 1 Lys ) g gct	g gad g Asp s Asp	c ago	g aar g Asi t ate	t cton Lei 27! c gton e Val	Lys 260 g cgo L Arg 5 c tgo	0 c agg g Arg c tgg	y ato	c acc e Thr c ccc r Pro	
103 104 105 107 108 109	atg Met cgg Arg	cta Leu 265 atq Med	250 a tog i Sei 5 g gto t Val	g ggo r Gly g cto l Leu	g too y Sei y gto i Val	e aaa Lys g gto L Val	gaa Glu 270 gto L Val	255 a aag 1 Lys 0 g gct 1 Ala	g gad s Asp t gta a Val	e ago P Aro a tti l Pho	g aar g Asr t atc = Ilc 29	t cton Leo 27: c gtone Val	Lys 260 g cgo L Arg 5 c tgo l Cys	o ago g Aro c tgo s Trp	g ato	c acc e Thr c ccc r Pro 295	1098
103 104 105 107 108 109	atg Met cgg Arg 280	cta Leu 265 atq Mei	250 a tog i Sei g gtog t Val	g ggo r Gly g cto l Leu	g tco y Sei y gto i Val	g aaa Lys g gto l Val 285	gaa Glu 270 gtg L Val	255 a aag 1 Lys 0 g gct 1 Ala	g gad s Asp c gta a Val	e ago p Aro a tti l Pho	g aar g Asi t ate = 110 290 g ate	t cton Lei 27! c gton e Val	260 g cgc a Arg 5 c tgc 1 Cys	o ago g Aro c tgo s Tri	g ato g Ilo g aco o Tho	c acc e Thr c ccc r Pro 295 a acc	
103 104 105 107 108 109 111	atg Met cgg Arg 280 atc	cta Leu 265 atq Mei	250 a tog i Sei g gtog t Val	g ggo r Gly g cto l Leu	g gto y Sei y gto y Val	c aaa Lys g gto l Val 285 a to	gaa Glu 270 gtg L Val	255 a aag 1 Lys 0 g gct 1 Ala	g gad s Asp c gta a Val	c ago o Aro a tti l Pho g cto	y aar y Asi t atc e Ilc 29 g atc	t cton Lei 27! c gton e Val	260 g cgc a Arg 5 c tgc 1 Cys	o ago g Aro c tgo s Tri	g ato g alo g aco o Tho	c acc e Thr c ccc r Pro 295 a acc	1098
103 104 105 107 108 109 111 112	atg Met cgg Arg 280 atc	cta Leu 265 ato Met Cao	250 tog 1 Ser 5 7 gtg 2 Val c ato	g ggc g ggc g ctg g ctg Let c tac e Tyr	g gto y Sei y gto y Val	c aaa Lys g gto l Val 285 a ato l Ile	a gaa 3 Glu 270 2 gto 1 Vai 5 ato	255 a aaq 1 Lys ) gct 1 Ala c aaa	g gac g Asp c gta val a gco	c agg p Arg a tti l Phe g ctg a Leu 30!	y aar y Asr t ate 29 g atu Il	t cton Leo 27! c gto e Valo 0 c aco	260 260 260 260 260 260 260 260 260 260	o ago c ago c tgo s Trp t coa	g atographic Theorem 31	c acc e Thr c ccc r Pro 295 a acc u Thr	1098
103 104 105 107 108 109 111 112 113	atg Met cgg Arg 280 atc	cta Let 265 ato Met	250 a tog i Ser i Ser i Val c ato s Ilo	g ggc g ggc g ctg l Leu c tac e Tyr	g too y Sei y Sei y Sei y Val c gto 300 c gto	g aaa g Lys g gto l Val 285 a ato l Ile	a gaa 3 Gli 270 gtg L Val	255 a aag 1 Lys ) g gct l Ala c aaa e Lys	g gad g gad g Asp c gta Val a god s Ala	c ago Aro A tti Phe g cto a Leo 30! c tgo	y aar y Asr t atc e Ilo 29 g atc Ilo 5 c at	t cton Leo 27! c gtc e Val 0 c acce Th:	260 tgo	o agg g Arg c tgg s Trp t cca e Pro	g atographic a gas of Global tags of the control of	c acc e Thr c ccc r Pro 295 a acc u Thr 0	1098 1146
103 104 105 107 108 109 111 112 113 115	atg Met cgg Arg 280 atc Ile aca Thr	cta Let 265 ato Met	250 a tog i Ser i Ser i Val c ato s Ilo	g ggc r Gly g ctg Let c tac e Tyr g acc n Thr	g too y Sei y Sei y Val c gto y Val gto y Val gto y Val y Val y Val	g aaa g Lys g gto l Val 285 a ato l Ile	a gaa 3 Gli 270 gtg L Val	255 a aag 1 Lys ) g gct l Ala c aaa e Lys	g gad g gad c gta val val gcg s Ala	c agg p Arg a tti l Pha g ctg a Leu 30! c tgc e Cys	y aar y Asr t atc e Ilo 29 g atc Ilo 5 c at	t cton Leo 27! c gtc e Val 0 c acce Th:	260 tgo	o agg g Arg c tgg s Trp t cca e Pro	y ate of the state	c acc e Thr c ccc r Pro 295 a acc u Thr	1098 1146
103 104 105 107 108 109 111 112 113 115 116	atg Met cgg Arg 280 atc Ile	cta Leu 265 ato Met Cac His	250 a tog i Ser i Ser i Ser i Val c ate s Ile t cae e Gli	g ggc g ctg g ctg Leu c tac e Tyr g acc n Thr	g to yall yall yall yall yall yall yall yal	g aaa g Lys g gto l Val 285 c ato l Ile	a gaa S Glu 270 C gto L Val S C ato E Ile t gg	255 a aag 1 Lys 0 g gct 1 Ala c aaa e Lys g cac p His	g gad g gad s Asp c gta val a god s Ala c tto s Phe 320	c agg p Arg a ttt l Pho g ctg a Leu 30! c tgo e Cy:	y aatu Ilusta atta	t cton Len 27! c gto e Val 0 c acce Th:	260 g cgo cgo cgo cgo cgo cgo cgo cgo cgo c	c agg g Arg c tgg s Trp t cca e Pro	y ato aco Th. a gas 31 ta y Ty	c acc e Thr c ccc r Pro 295 a acc u Thr 0 c acg r Thr	1098 1146
103 104 105 107 108 109 111 112 113 115 116	atg Met cgg Arg 280 atc Ile aca Thr	J Cta Let 265 J Act Cac Cac His	250 tog 3 gtg 3 gtg 4 Val 4 atc 5 atc 6 at	g ggo g ggo g cto g cto c tac e Tyr g acc n Thr 315	g to yall yall yall yall yall yall yall yal	g aaa g Lys g gto l Val 285 c ato l Ile ) c too	a gaa 3 Glu 270 c gto L Val 5 ato c ato c tgo r Tro	255 a aag 1 Lys 7 g gct 1 Ala c aaa e Lys g cac p His	g gad g gad s Asp c gta a Val a god s Ala c tto s Pho 320 t tao	c aggo Argo Argo Argo Argo Argo Argo Argo A	y aar y As; t atc e Ilc 29 g at; u Ilc 5 c at; s Il	t cton Len 27! c gto gto o c acce Th:	Lys 260 g cgo Arg 5 c tgo tgo tgo tgo tgo ttgo tgo tgo tgo tg	o agg Arg Arg Erg From From From From From From From From	y ato gate of the graph of the	c acce Thr cccr Pro 295 a accu Thr c acg	1098 1146 1194
103 104 105 107 108 109 111 112 113 115 116 117 119	atg Met cgg Arg 280 atc Ile aca Thr	J Cta Let 265 J Act Cac Cac His	250 tog g gtg tog t Val t cac t cac t Cac t Cy:	g ggc g ctg g ctg l Leu c tac e Tyr g acc n Thr 315 c ctg s Leu	g to yall yall yall yall yall yall yall yal	g aaa g Lys g gto l Val 285 c ato l Ile ) c too	a gaa 3 Glu 270 c gto L Val 5 ato c ato c tgo r Tro	255 a aag 1 Lys 0 g gct 1 Ala c aaa e Lys g cac p His t ctt	g gad g gad g gad g gad a Val a gad s Ala c tto s Pho t tac a Ty:	c aggo Argo Argo Argo Argo Argo Argo Argo A	y aar y As; t atc e Ilc 29 g at; u Ilc 5 c at; s Il	t cton Len 27! c gto gto o c acce Th:	Lys 260 g cgo Arg 5 c tgo tgo tgo tgo tgo ttgo tgo tgo tgo tg	oc ago g Aro c tgo s Trp t cca e Pro g ggt u Gly t gaa p Glu	y ato gate of the graph of the	c acc e Thr c ccc r Pro 295 a acc u Thr 0 c acg r Thr	1098 1146 1194
103 104 105 107 108 109 111 112 113 115 116 117 119 120	atg Met Cgg Arg 280 atc Ile aca Thr	y cta 265 y ato Met C cace His ttt Phe c ago	250 a tog a tog g gtg c val c atc s Ilc t cac e Gli c tg c Cy; 330	g ggc g ctg t Let c tace Tyr g acc n Thr 315 c ctg s Let	g to gto yall and yal	g aaa Lys g gtc l Val 285 atc l Ile ) t tcc t Sen t cca	a gaas Glu 270 gto gto c atc c atc c tgo r Tr a gto	255 a aag 1 Lys 2 g ct 1 Ala 2 aaa 2 Lys 3 cag 4 ct 1 Let 3 3 !	g gad g gad g Asp c gta a gad s Ala c tta 320 t tad i Tyr	c aggo Argo Argo Argo Argo Argo Argo Argo A	y aar t ate 29 g at u Il 5 c at c tt a Ph	t cten Lei 27! c gte Vall 0 c acce Thi	1 Lys 260 g cgc g cgc t Arc t tgc g att T Ilc t ttc g ga u As 34	oc agg g Arg c tgg s Trp t cca e Pro g gg u Gly t gaa p Glu	y ato gaco Thomas Galactic Tay	c acce Thr c ccc 295 a accu Thr 0 c acg Thr c ttc n Phe	1098 1146 1194
103 104 105 107 108 109 111 112 113 115 116 117 119 120 121	atg Met Cgg Arg 280 atc Ile aca Thr	y cta 265 y atcy Met ) c cace His ttt c Phe c ago	250 a tog a tog g gtg c Val c atc s Ilo t cac e Gl c tg c Tg c 330 a tg	g ggc g ctg g ctg tace tace Tyr g acc n Thi 315 c ctg s Let 0	g to yall yall yall yall yall yall yall yal	g aaa Lys g gtc l Val 285 atc l Ile ) t cca h Pro	a gaas Glu 270 gtg Val 5 c atc c tgc Trj a gtr o Val	255 a aag 1 Lys 2 g ct 1 Ala 2 aaa 2 Lys 3 ct 2 tg 2 tg 3	g gad g gad s Asp c gta a gad s Ala c tta 320 t tac i Ty:	c aggo Argo Argo Argo Argo Argo Argo Argo A	y aar y Asr t atc 29 g atc 11 5 c at c tt a Ph	t cten Len 27: c gte Val 0 c acce Thi t gc e Ali c cte	y Lys 260 g cgo a Arg c tgo c tgo c tgo g att g att t tto g ga y Asj 34 g tc	oc agg g Arg c tgg t cca e Pro g gg u Gl y t gaa p Gl oc acc	y ato gate a gate a gate tax a gate a	c acce Thr c ccc Thr c accumum Thr c ttc phe	1098 1146 1194 1242
103 104 105 107 108 109 111 112 113 115 116 117 119 120 121 123 124	atg Met cgg Arg 280 atc Ile aca Thr aac Asn	y cta 265 ato Met Cac His ttt Pho ago Ser y cga Sare	250 a tog i Sei i	g ggc g ctg g ctg tace tace Tyr g acc n Thi 315 c ctg s Let 0	g to yall yall yall yall yall yall yall yal	g aaa Lys g gtc l Val 285 atc l Ile ) t cca h Pro	a gaas Glu 270 gtg Val 5 c atc c tgc Trj a gtr o Val	255 a aag 1 Lys 0 gct 1 Ala c aaa e Lys g cac p His t ctt 33! c tgc e Cy:	g gad g gad s Asp c gta a gad s Ala c tta 320 t tac i Ty:	c aggo Argo Argo Argo Argo Argo Argo Argo A	y aar y Asr t atc 29 g atc 11 5 c at c tt a Ph	t cten Len 27: c gte Val 0 c acce Thi t gc e Ali c cte	y Lys 260 g cgc g cgc t Arc t tgc g att t ttc a Lec g gas y 34 g tcc r Se	oc agg g Arg c tgg t cca e Pro g gg u Gl y t gaa p Gl oc acc	y ato gate a gate a gate tax a gate a	c acce Thr c ccc 295 a accu Thr 0 c acg Thr c ttc n Phe	1098 1146 1194 1242
103 104 105 107 108 109 111 112 113 115 116 117 119 120 121 123 124 125	atg Met Cgg 280 atc Ile aca Thr aac Asn	y ctar 265 ato Met Cace His tthe Phe ago Ser 34!	250 a tog i Sei i	g ggo g cto g cto l Leu c tac e Tyr g acco n Thr s cto s Leu c tto	g to get a g	g aaa g Lys g gto l Val 285 a ato l Ile ) c too a gae g Glu	a gaas Glu 270 270 270 270 270 270 270 270 270 270	255 a aag 1 Lys 2 g ct 2 aag 2 Lys 3 ct 3 ct 2 ct 3	g gac g gac g Asp c gta a gcg s Ala c ttc s Phe 320 t tac t tac s Ile	c aggo Argo Argo Argo Argo Constant Con	y aar t atc 29 y atc t atc c atc c atc c atc c acc c acc c acc	t cten Len 27: c gte e Val 0 c acce Th: c e Len c tce c tce c tce 35 t age	y Lys 260 g cgc Arc 5 tgc Cy: g attract tto g as 34 g tcc g ga g se 5 g ga	c agg g Arg c tgg s Trp t cca e Pro g gg u Glu 329 t gaa p Glu o acg r Th:	y ato gate of the graph of the	c acce Thr c ccc r Pro 295 a acc u Thr c acg r Thr c ttc n Phe c gaa e Glu c tcc	1098 1146 1194 1242
103 104 105 107 108 109 111 112 113 115 116 117 119 120 121 123 124 125	atg Met Cgg 280 atc Ile aca Thr aac Asn	y ctar 265 ato Met Cace His tthe Phe ago Ser 34!	250 a tog i Sei i	g ggo g cto g cto l Leu c tac e Tyr g acco n Thr s cto s Leu c tto	g to get a g	g aaa g Lys g gto l Val 285 a ato l Ile ) c too a gae g Glu	a gaas Glu 270 270 270 270 270 270 270 270 270 270	255 a aag 1 Lys 2 g ct 2 aag 2 Lys 3 ct 3 ct 2 ct 3	g gac g gac g Asp c gta a gcg s Ala c ttc s Phe 320 t tac t tac s Ile	c aggo Argo Argo Argo Argo Constant Con	y aar t atc 29 y atc t atc c atc c atc c atc c acc c acc c acc	t cten Len 27: c gte e Val 0 c acce Th: c e Len c tce c tce c tce 35 t age	y Lys 260 g cgc Arc 5 tgc Cy: g attract tto g as 34 g tcc g ga g se 5 g ga	c agg g Arg c tgg s Trp t cca e Pro g gg u Glu 329 t gaa p Glu o acg r Th:	y ato gate of the graph of the	c acce Thr c ccc r Pro 295 a acc u Thr c acg r Thr c ttc n Phe c gaa e Glu c tcc	1098 1146 1194 1242 1290
103 104 105 107 108 109 111 112 113 115 116 117 120 121 123 124 125 127 128	atg Met Cgg 280 atc Ile aca Thr aac Asn	J Cta 265 ato Met Cace His C Phe C ago S Arc 345 J Caa J Caa J Caa	250 a tog i Sei i	g ggo g cto g cto l Leu c tac e Tyr g acco n Thr s cto s Leu c tto	g to get a g	g aaa g Lys g gto l Val 285 a ato l Ile ) c too a gae g Glu	a gaas Glu 27(c gtg Val 5 atce Ile c tge Trj a gtt O Val 35(a gtc) a gtc	255 a aag 1 Lys 2 g ct 2 aag 2 Lys 3 ct 3 ct 2 ct 3	g gac g gac g Asp c gta a gcg s Ala c ttc s Phe 320 t tac t tac s Ile	c aggo Argo Argo Argo Argo Constant Con	y aar t atc 29 y atc t atc c atc c atc c atc c acc c acc c acc	t cten Len 27: c gtc e Val 0 c acce Th. c ctc e Len c tc a 35 t agr	y Lys 260 g cgc Arc 5 tgc Cy: g attract tto g as 34 g tcc g ga g se 5 g ga	c agg g Arg c tgg s Trp t cca e Pro g gg u Glu 329 t gaa p Glu o acg r Th:	y ato gate of the graph of the	c acce Thr c ccc r Pro 295 a acc u Thr c acg r Thr c ttc n Phe c gaa e Glu	1098 1146 1194 1242 1290

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/841,720D

DATE: 10/08/2002
TIME: 13:42:58

Input Set : A:\INDA002USD1.APP

Output Set: N:\CRF4\10082002\1841720D.raw

														4-	a+ a	a > a	1386
131	acg	gct	aat	aca	gtg	gat	cga	act	aac	cac	cag	cta	gaa	aat	CLG	gay	1300
132	Thr	Ala	Asn	Thr		Asp	Arg	Thr	Asn	HIS	GIn	Leu	GIU	ASII	390	GIU	
. 133					380					385		aaa+	~ ~~	a = 00			1437
135	gca	gaa	act	gct	cca	ttg	ccc	taac	tggg	tc t	caca	.cca L	.c ca	gacc	CLUG		1457
136	Ala	Glu	Thr		Pro	Leu	Pro										
137				395								-+	~~~+	a+ a	+ aaa	agget	1497
139	ctaa	gctt	ag a	ggcc	gcca	it ct	acgt	.ggaa	tca	ggil	gc.	gica	9994	ot o	racta	aggct	1557
141	ctgg	tttc	ct g	agaa	acca	it ct	gato	ctgc	att	Caaa	gue	acco	anaan	an a	ctac	cttca	1617
		gcac	cat g	agag	atgo	et ca	igact	gato	aag	acca	yaa	yaaa	yaay	ay a	Ccac	cggac	1618
145	o a																
	3 <210> SEQ ID NO: 2																
	9 <211> LENGTH: 398 0 <212> TYPE: PRT																
					TD 76 FT												
			RGANI														
153	<400	)> SI	EQUEN Ser	ICE:	Z mb∞	C1	Dro	C117	λen	Thr	Ser	Asn	Cvs	ser	Asp	Pro	
		Asp	ser	ser	5	СТУ	PIO	СТУ	ASII	10	DCI	no <sub>P</sub>	010		15		
155	_ 1		Gln	7.1.0		Crrc	Cor	Dro	λla		Glv	Ser	Trp	Leu		Leu	
	Leu	Ата	GIII	20	sei	Cys	261	FIO	25	110	<b>0</b> ±1	502		30			
158	Com	ni a	Val	7.00	C1 v	λen	Gln	Ser		Pro	Cvs	Glv	Leu	Asn	Arq	Thr	
	ser	HIS	35	АЗР	GTÄ	ASII	GIII	40	пър	110	010	1	45		,		
161	C1**	T OU	Gly	Glv	Δen	Δsn	Ser		Cvs	Pro	Gln	Thr	Gly	Ser	Pro	Ser	
	СТА	50	GIY	Gry	KSII	нор	55		010			60	-				
164	Mot	7/2 1	Thr	Δla	Tle	Thr		Met	Ala	Leu	Tvr		Ile	Val	Cys	Val	
167	65	val	1111	AIG	110	70					75				_	80	
160	Val	Glv	Leu	Phe	Glv	Asn	Phe	Leu	Val	Met	Tyr	Val	Ile	Val	Arg	Tyr	
170	VUI	GLY	пса	1 110	85					90	-				95		
170	Thr	T.vs	Met	Lvs		Ala	Thr	Asn	Ile	Tyr	Ile	Phe	Asn	Leu	Ala	Leu	
173				100					105					TT0			•
175	Ala	Asp	Ala	Leu	Ala	Thr	Ser	Thr	Leu	Pro	Phe	${\tt Gln}$	Ser	Val	Asn	Tyr	
176			115					120					125				
178	Leu	Met	Gly	Thr	Trp	Pro	Phe	Gly	Thr	Ile	Leu	Cys	Lys	Ile	Val	Ile	
179		130					135					140					
181	Ser	Ile	Asp	Tyr	Tyr	Asn	Met	Phe	Thr	Ser	Ile	Phe	Thr	Leu	Cys	Thr	
182	145					150					155				•	160	
184	Met	Ser	Val	Asp	Arg	Tyr	Ile	Ala	Val	Cys	His	Pro	Val	Lys	Ala	Leu	
185					165					170					175		
187	Asp	Phe	Arg	Thr	Pro	Arg	Asn	Ala	Lys	Ile	Val	Asn	Val	Cys	Asn	Trp	
188				180					185	_		_,		190	1		
190	Ile	Leu	Ser	Ser	Ala	Ile	Gly	Leu	Pro	Val	Met	Phe	Met	Ala	Thr	Thr	
191			195					200		_		_,	205	~		2	
193	Lys	Tyr	Arg	Gln	Gly	Ser		Asp	Cys	Thr	Leu	Thr	Phe	Ser	Hls	Pro	
194		210					215				_	220	<b>51</b>	<b>*1</b> -	D1		
			Tyr	Trp	Glu	Asn	Leu	Leu	Lys	Ile	Cys	val	rne	тте	ьие	ATG	
197	225					230			<b></b> '		235	m	<b>01</b>	T ~	Mat	240	
		Ile	Met	Pro		Leu	Ile	Ile	Thr	val	Cys	туr	стХ	ьeu	Mer	тте	
200					245				<b>.</b>	250	C1	0	T ***	C1	255 Lyc	λαν	
		Arg	Leu			val	arg	мет	ьeu	ser	СΤΆ	ser	пуз	270	пуз	vah	
203				260					265					2/,0			

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/841,720D

DATE: 10/08/2002
TIME: 13:42:58

Input Set : A:\INDA002USD1.APP

Output Set: N:\CRF4\10082002\I841720D.raw

```
205 Arg Asn Leu Arg Arg Ile Thr Arg Met Val Leu Val Val Val Ala Val
                                280
            275
208 Phe Ile Val Cys Trp Thr Pro Ile His Ile Tyr Val Ile Ile Lys Ala
                                                300
                            295
211 Leu Ile Thr Ile Pro Glu Thr Thr Phe Gln Thr Val Ser Trp His Phe
                                            315
                        310
214 Cys Ile Ala Leu Gly Tyr Thr Asn Ser Cys Leu Asn Pro Val Leu Tyr
                                        330
                    325
217 Ala Phe Leu Asp Glu Asn Phe Lys Arg Cys Phe Arg Glu Phe Cys Ile
                                    345
                340
220 Pro Thr Ser Ser Thr Ile Glu Gln Gln Asn Ser Thr Arg Val Arg Gln
                                360
            355
223 Asn Thr Arg Glu His Pro Ser Thr Ala Asn Thr Val Asp Arg Thr Asn
                                                 380
                            375
226 His Gln Leu Glu Asn Leu Glu Ala Glu Thr Ala Pro Leu Pro
                        390
227 385
231 <210> SEQ ID NO: 3
232 <211> LENGTH: 1618
233 <212> TYPE: DNA
234 <213> ORGANISM: RAT
236 <220> FEATURE:
237 <221> NAME/KEY: CDS
238 <222> LOCATION: (339)..(1232)
240 <400> SEQUENCE: 3
241 cgtggaaggg ggctacaagc agaggagaat atcagacgct cagacgttcc cttctgcctg 60
243 ccgctcttct ctggttccac tagggctggt ccatgtaaga atctgacgga gcctagggca 120
245 gctgtgagag gaagaggctg gggcgcgtgg aacccgaaaa gtctgagtgc tctcagttac 180
247 agoctaccta gtocgoagca ggoottcago accatggaca goagcaccgg cocagggaac 240
249 accagegact geteagacee ettageteag geaagttget ceceageace tggeteetgg 300
251 ctcaacttgt cccacgttga tggcaaccag tccgatcc atg cgg tct gaa ccg cac 356
                                               Met Arg Ser Glu Pro His
252
253
255 cgg gct tgg cgg gaa cga cag cct gtg ccc tca gac cgg cag ccc ttc
                                                                        404
256 Arg Ala Trp Arg Glu Arg Gln Pro Val Pro Ser Asp Arg Gln Pro Phe
                                      15
                 10
257
259 cat ggt cac age cat tac cat cat ggc cct cta ctc tat cgt gtg tgt
                                                                        452
260 His Gly His Ser His Tyr His His Gly Pro Leu Leu Tyr Arg Val Cys
                                  30
              25
263 agt ggg cct ctt cgg aaa ctt cct ggt cat gta tgt gat tgt aag ata
                                                                        500
264 Ser Gly Pro Leu Arg Lys Leu Pro Gly His Val Cys Asp Cys Lys Ile
                              45
         40
267 cac caa aat gaa gac tgc cac caa cat cta cat ttt caa cct tgc tct
                                                                        548
268 His Gln Asn Glu Asp Cys His Gln His Leu His Phe Gln Pro Cys Ser
                          60
 269 55
271 ggc aga cgc ctt agc gac cag tac act gcc ctt tca gag tgt caa cta
                                                                        596
272 Gly Arg Arg Leu Ser Asp Gln Tyr Thr Ala Leu Ser Glu Cys Gln Leu
                      75
275 cct gat ggg aac atg gcc ctt cgg aac cat cct ctg caa gat cgt gat
276 Pro Asp Gly Asn Met Ala Leu Arg Asn His Pro Leu Gln Asp Arg Asp
```

RAW SEQUENCE LISTING DATE: 10/08/2002 PATENT APPLICATION: US/09/841,720D TIME: 13:42:58

Input Set : A:\INDA002USD1.APP

Output Set: N:\CRF4\10082002\I841720D.raw

277				90					95					100			
															ctg		692
280	Leu	Asn	Arg	Leu	Leu	Gln	His	Val	His	Gln	His	Ile	His	Pro	Leu	His	
281			105					110					115				
283	cat	gag	cgt	gga	ccg	cta	cat	tgc	tgt	ctg	cca	CCC	agt	caa	agc	cct	740
284	His	Glu	Arg	Gly	Pro	Leu	His	Cys	Cys	Leu	Pro	Pro	Ser	Gln	Ser	Pro	
285		120					125					130					
287	gga	ttt	ccg	tac	ccc	ccg	aaa	tgc	caa	aat	cgt	caa	cgt	ctg	caa	ctg	788
															Gln		
	135			-		140	-	•			145		_			150	
		cct	ct.c	ttc	tac	cat	caa	tct	qcc	tat	aat	qtt	cat	qqc	aac	cac	836
292	Asp	Pro	Len	Phe	Cvs	His	Ara	Ser	Ala	Cvs	Asn	Val	His	Glv	Asn	His	
293	op		204		155		9			160				1	165		
	aaa	ata	cad	αca		atc	cat	aσa	ttσ		cct	cac	at.t.	ctc	cca	ccc	884
															Pro		
297	цуз	110	GIII	170	O I Y	vuı	1115	1119	175	1110	110		, 41	180		,	
	220	at a	a+ a		~~~	ara a	oot	aat		aat	cta	tat	ctt		ctt	Cac	932
																	932
	ASII	Leu	185	ьeu	СТУ	GLU	PIO	190	GIII	ASII	neu	Cys	195	тут	Leu	Arg	
301							+			L ~+	~+ ~	++-		aat	~~+	ant.	980
															gat		900
	Pne		HIS	Ата	ASP	Pro		HIS	HIS	Cys	Val		ALG	PIO	Asp	ASP	
305		200					205					210					1000
															aaa		1028
		Thr	Thr	GIn	GLu		ser	Hls	Ата	тте		Leu	GIN	Arg	Lys		
309						220					225					230	1000
															ggc		1076
	Gln	Glu	Ser	Ala		Asp	His	Pro	Asp		Ala	GLy	GLy	Arg	Gly	Cys	
313					235					240		o.			245		
															caa		1124
316	Ile	${ t Tyr}$	Arg		Leu	Asp	Pro	His		His	Leu	Arg	His		Gln	Ser	
317				250					255					260			
															gca		1172
320	Ala	Asp	His	Asp	Ser	Arg	Asn	His	Ile	Ser	Asp	Arg		Leu	Ala	Leu	
321			265					270					275				
															tct		1220
324	Leu	His	Cys	Phe	Gly	Leu	His	Glu	Gln	Leu	Pro	Glu	Ser	Ser	Ser	Leu	
325		280					285					290					
327	cgc	ctt	cct	gga	tgaa	aact	tc a	agco	gatgo	et to	cagag	gagtt	cto	gcato	cca		1272
328	Arg	Leu	Pro	Gly													
329	295																
331	acct	cgto	cca c	gato	gaad	ea go	caaaa	actco	act	cgag	jtcc	gtca	igaad	cac t	aggg	gaacat	1332
																gcagaa	
																gaggcc	
																gagaa	
																gagag	
				_			igaag							-			1618
	_	-		NO:	_		,	,		, ,	-	, ,					
				1: 29													
	<212				. •												
J 1 0				\ -													

VERIFICATION SUMMARY

DATE: 10/08/2002

PATENT APPLICATION: US/09/841,720D

TIME: 13:42:59

Input Set : A:\INDA002USD1.APP

Output Set: N:\CRF4\10082002\1841720D.raw